

## ABSTRACT

One system of the present invention includes a modulated light source subsystem to provide a first light signal with a first modulation index, and a second light signal with a second modulation index. The system also includes a region to receive an analyte for evaluation and direct the first light signal thereto, and a detector responsive to the second light signal and a third light signal from the region to provide an output representative of spectroscopic information. The third light signal further includes noise induced by residual amplitude modulation that is reduced at the detector by the second light signal in accordance with a difference between the first modulation index and the second modulation index.